WEST Search History

DATE: Friday, August 08, 2003

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT; PLUR=YES; OP=ADJ			
L16	L12 not l2 and @pd<20001113	20	L16
L15	L14 and @pd<20001113	70	L15
L14	L13 not l2	98	L14
L13	L11 and interfer$	107	L13
L12	(4893886 or 4630890 or 4606605 or 4529262 or 4453805 or 4327288 or 4239330 or 4092535 or 4063106 or 3810131 or 3808550 or 3808432 or 3793541 or 3778612 or 3774121 or 3769096 or 3725810 or 3710279 or 3662183 or 3638139 or 3628182 or 3620599) and interfer? not l2	27	L12
L11	(4893886 or 4630890 or 4606605 or 4529262 or 4453805 or 4327288 or 4239330 or 4092535 or 4063106 or 3810131 or 3808550 or 3808432 or 3793541 or 3778612 or 3774121 or 3769096 or 3725810 or 3710279 or 3662183 or 3638139 or 3628182 or 3620599).uref.	289	L11
L10	L6.uref.	0	L10
L9	(L6.uref. and interfer$) not l2	0	L9
L8	(L6 and interfer$) not l2	5	L8
L7	L6 and interfer? not l2	0	L7
L6	"ashkin".in.	33	L6
L5	"ashkin a$".in.	0	L5
L4	ashkin a.in.	0	L4
L3	('5212382')[PN]	1	L3
L2	L1 and interfer$	9	L2
L1	3710279.uref.	24	L1

END OF SEARCH HISTORY

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FILE 'HOME' ENTERED AT 08:13:11 ON 08 AUG 2003

=> file caplus scisearch
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'CAPLUS' ENTERED AT 08:13:48 ON 08 AUG 2003
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FILE 'SCISEARCH' ENTERED AT 08:13:48 ON 08 AUG 2003
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=> e chiou a e, 1997/re
E1             1      CHIOU A E, 1996, V133, P7, OPT COMMUN/RE
E2             1      CHIOU A E, 1996, V7, P11, OPT PHOTONICS NEWS/RE
E3             0 -->  CHIOU A E, 1997/RE
E4            16      CHIOU A E, 1997, V133, P7, OPT COMMUN/RE
E5             2      CHIOU A E, 1999, V12, P2074, P IEEE/RE
E6             2      CHIOU A E, 1999, V87, P2074, P IEEE/RE
E7             1      CHIOU A E, COMMUNICATION/RE
E8             1      CHIOU A G Y, 1996, IN PRESS OPHTHALMOLO/RE
E9             1      CHIOU A G Y, 1996, V105, P746, OPHTHALMOLOGY/RE
E10            2      CHIOU A G Y, 1996, V208, P279, KLIN MONATSBL AUGENH/RE
E11            1      CHIOU A G Y, 1996, V80, P1, BR J OPHTHALMOL/RE
E12            1      CHIOU A G Y, 1996, V80, P541, BR J OPHTHALMOL/RE

=> s e1 e4
L1             1 "CHIOU A E, 1996, V133, P7, OPT COMMUN"/RE "CHIOU A E, 1997,
                 V133, P7, OPT COMMUN"/RE

=> s e4
L2            24 "CHIOU A E, 1997, V133, P7, OPT COMMUN"/RE

=> s l1 or l2
L3            25 L1 OR L2

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4            18 DUP REM L3 (7 DUPLICATES REMOVED)
                    ANSWERS '1-9' FROM FILE CAPLUS
                    ANSWERS '10-18' FROM FILE SCISEARCH

=> d bib abs 1-18

L4   ANSWER 1 OF 18  CAPLUS  COPYRIGHT 2003 ACS on STN DUPLICATE 1
AN   2002:372482  CAPLUS
DN   137:70115
TI   Three-dimensional optically trapped structures
AU   MacDonald, M. P.; Paterson, L.; Volke-Sepulveda, K.; Arlt, J.; Sibbett,
     W.; Dholakia, K.
CS   Sch. Physics and Astronomy, St. Andrews Univ., St. Andrews, Fife, KY16
     9SS, UK
SO   Science (Washington, DC, United States) (2002), 296(5570), 1101-1103
     CODEN: SCIEAS; ISSN: 0036-8075
PB   American Association for the Advancement of Science
DT   Journal
LA   English
AB   An interferometric pattern between 2 annular laser beams is used to
     construct 3-dimensional (3D) trapped structures within an optical tweezers
     setup.  In addn. to being fully translatable in 3 dimensions, the trapped
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structure can be rotated controllably and continuously by introducing a frequency difference between the 2 laser beams. These interference patterns could play an important role in the creation of extended 3D cryst. structures.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 2
AN 2002:625911 CAPLUS
DN 137:301360
TI Lights, action: optical tweezers
AU Molloy, Justin E.; Padgett, Miles J.
CS Department of Biology, The University of York, York, YO1 5YW, UK
SO Contemporary Physics (2002), 43(4), 241-258
CODEN: CTPHAF; ISSN: 0010-7514
PB Taylor & Francis Ltd.
DT Journal; General Review
LA English
AB A review. Optical tweezers were 1st realized 15 yr ago by Arthur Ashkin and co-workers at the Bell Telephone Labs. Since that time there was a steady stream of developments and applications, particularly in the biol. field. In the last 5 yr the flow of work using optical tweezers has increased significantly, and it seems as if they are set to become a mainstream tool within biol. and nanotechnol. fields. The authors seek to explain the underpinning mechanism behind optical tweezers, to review the main applications of optical tweezers to date, to present some recent technol. advances and to speculate on future applications within both biol. and nonbiol. fields.

RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 3
AN 2002:4720 CAPLUS
DN 136:190827
TI Revolving interference patterns for the rotation of optically trapped particles
AU MacDonald, M. P.; Volke-Sepulveda, K.; Paterson, L.; Arlt, J.; Sibbett, W.; Dholakia, K.
CS The School of Physics and Astronomy, St. Andrews University, North Haugh, St. Andrews, Fife, KY16 9SS, UK
SO Optics Communications (2002), 201(1-3), 21-28
CODEN: OPCOB8; ISSN: 0030-4018
PB Elsevier Science B.V.
DT Journal
LA English
AB Optically trapped objects are rotated controllably in the interference pattern between a Laguerre-Gaussian (LG) beam and a Gaussian beam. The interference pattern is analyzed and its properties as it propagates are modeled, showing the important role played by the Guoy-phase of the 2 interfering beams. An anal. of producing controlled rotation of the interference pattern using a glass plate is presented demonstrating the ease with which the rotation can be controlled.

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4
AN 2001:790184 CAPLUS
DN 136:142484
TI One-step, micrometer-scale organization of nano- and mesoparticles using holographic photopolymerization: a generic technique
AU Vaia, Richard A.; Dennis, Cindi L.; Natarajan, Lalgudi V.; Tondiglia, Vincent P.; Tomlin, David W.; Bunning, Timothy J.
CS Air Force Research Laboratory, Materials and Manufacturing Directorate AFRL/MLPJ, WPAFB, OH, 45433, USA
SO Advanced Materials (Weinheim, Germany) (2001), 13(20), 1570-1574

CODEN: ADVMEW; ISSN: 0935-9648
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB Holog. photopolymn. is a flexible, simple. one-step technique to create defect-free, sub-micrometer patterns of particles over large dimensions. The sequestering of three sep. types of particles in a ID grating structure, perpendicular to the substrate, was demonstrated. These permanent structures were formed in a matter of seconds. Extrapolation.to much smaller dimensions and to other geometries is possible. The resulting Bragg gratings exhibited substantial diffraction efficiencies. Extrapolation of the holog. technique to multiple beams is easily envisioned.
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 5
AN 2001:493181 CAPLUS
DN 135:232335
TI Trapping and manipulation of low-index particles in a two-dimensional interferometric optical trap
AU MacDonald, M. P.; Paterson, L.; Sibbett, W.; Dholakia, K.; Bryant, P. E.
CS School of Physics and Astronomy, St. Andrews University, St. Andrews, KY16 9SS, UK
SO Optics Letters (2001), 26(12), 863-865
CODEN: OPLEDP; ISSN: 0146-9592
PB Optical Society of America
DT Journal
LA English
AB The authors demonstrate optical trapping and manipulation of low-index spheres in 2 dimensions, using the pattern produced by 2 interfering plane waves. This technique shows, for what is believed to be the 1st time, alignment of an array of hollow spheres and simultaneous manipulation of high- and low-index particles in the horizontal plane. Also, rodlike particles (up to 30 .mu.m in length) are manipulated simultaneously with the low-index particles. This technique offers a practical method for manipulating bubbles, low-index droplets, or rodlike biol. samples.
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 6
AN 2000:132796 CAPLUS
TI Dynamic array generation and pattern formation for optical tweezers
AU Mogensen, P. C.; Gluckstad, J.
CS Optics and Fluid Dynamics Department, Riso National Laboratory, Roskilde, DK-4000, Den.
SO Optics Communications (2000), 175(1,2,3), 75-81
CODEN: OPCOB8; ISSN: 0030-4018
PB Elsevier Science B.V.
DT Journal
LA English
AB The generalised phase contrast approach is used for the generation of optical arrays of arbitrary beam shape, suitable for applications in optical tweezers for the manipulation of biol. specimens. This approach offers numerous advantages over current techniques involving the use of computer-generated holograms or diffractive optical elements. We demonstrate a low-loss system for generating intensity patterns suitable for the trapping and manipulation of small particles or specimens.
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 7
AN 1998:277149 CAPLUS
DN 129:34202
TI Optical tweezer arrays and optical substrates created with diffractive

optics
AU Dufresne, Eric R.; Grier, David G.
CS The James Franck Institute, Chicago, IL, 60637, USA
SO Review of Scientific Instruments (1998), 69(5), 1974-1977
CODEN: RSINAK; ISSN: 0034-6748
PB American Institute of Physics
DT Journal
LA English
AB The authors describe a simple method for creating multiple optical tweezers from a single laser beam using diffractive optical elements. As a demonstration of this technique, the authors implemented a 4.times.4 square array of optical tweezers, the hexadeca tweezer. Elements of optical system include a frequency-doubled Nd:YAG laser (.lambda. = 532 nm), a diffractive optic, two Keplerian telescopes, a microscope objective, and an Edmund Scientific P53191 4.times.4 diffractive square array generator. A dichroic mirror allowed imaging of trapped silica spheres suspended in deionized water. Diffractively generated optical tweezers will facilitate many new expts. in pure and applied physics. They will also be useful for fabricating nanocomposite materials and devices, including photonic bandgap materials (e.g. self-assembled three-dimensionally ordered colloidal crystals) and optical circuit elements.
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:19263 CAPLUS
DN 138:294119
TI Transfer of orbital angular momentum to an optically trapped low-index particle
AU Garces-Chavez, V.; Volke-Sepulveda, K.; Chavez-Cerda, S.; Sibbett, W.; Dholakia, K.
CS North Haugh, University of St. Andrews, School of Physics & Astronomy, North Haugh, St. Andrews, Fife, KY16 9SS, UK
SO Physical Review A: Atomic, Molecular, and Optical Physics (2002), 66(6), 063402/1-063402/8
CODEN: PLRAAN; ISSN: 1050-2947
PB American Physical Society
DT Journal
LA English
AB We demonstrate the transfer of orbital angular momentum from a light beam to a trapped low-index particle. The particle is trapped in a dark annular region of a high-order Bessel beam and rotates around the beam axis due to scattering from the helical wave fronts of the light beam. A general theor. geometrical optics model is developed that, applied to our specific situation, corroborates tweezing and transfer of orbital angular momentum to the low-index particle. Good quant. agreement between theory and expt. for particle rotation rates is obsd.
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:416228 CAPLUS
DN 129:154508
TI Optical trapping of Rayleigh particles using a Gaussian standing wave
AU Zemanek, P.; Jonas, A.; Sramek, L.; Liska, M.
CS Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Brno, 612 64, Czech Rep.
SO Optics Communications (1998), 151(4,5,6), 273-285
CODEN: OPCOB8; ISSN: 0030-4018
PB Elsevier Science B.V.
DT Journal
LA English
AB We suggest a modification of a single beam optical trap which enables more effective axial trapping of nanoparticles. We employed interference of an

incident wave and the wave which is reflected by the bottom of the trapping cell to create a standing wave trap. The scattering force is strongly suppressed for a highly reflective surface in this configuration and consequently the axial force is represented only by the axial gradient force. The main advantage of the standing wave set-up is that it produces a much stronger axial gradient force than the single beam trap, even without high N.A. focusing optics. The trap is less than four times deeper than the single beam one produced by a laser of the same power so that smaller particles could be trapped in the vicinity of an array of stable positions sepd. by .lambda./2 along the beam axis. Even the axial trap stiffness is several orders higher than in the single beam trap.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 2003:609261 SCISEARCH
GA The Genuine Article (R) Number: 698NM
TI Preface: Optical tweezers in a new light
AU Molloy J E (Reprint); Dholakia K; Padgett M J
CS Natl Inst Med Res, Div Phys Biochem, Mill Hill, London NW7 1AA, England (Reprint); Natl Inst Med Res, Div Phys Biochem, London NW7 1AA, England; Univ St Andrews, Dept Phys & Astron, St Andrews KY16 9SS, Fife, Scotland; Univ Glasgow, Dept Phys & Astron, Glasgow G12 8QQ, Lanark, Scotland
CYA England; Scotland
SO JOURNAL OF MODERN OPTICS, (JUL 2003) Vol. 50, No. 10, pp. 1501-1507.
Publisher: TAYLOR & FRANCIS LTD, 4 PARK SQUARE, MILTON PARK, ABINGDON OX14 4RN, OXON, ENGLAND.
ISSN: 0950-0340.
DT Editorial; Journal
LA English
REC Reference Count: 35
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Optical tweezers were invented in the mid-1980s by Arthur Ashkin and co-workers at the Bell Telephone Laboratories. Since then there has been a steady stream of developments and applications, particularly in the biological field. In the last five years, work using optical tweezers has increased significantly and they are becoming a mainstream tool within biological and nanotechnological fields. This introductory article seeks to explain the underpinning mechanism behind optical tweezers, present some recent technological advances and speculate on future applications within both biological and non-biological fields.

L4 ANSWER 11 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 2003:464182 SCISEARCH
GA The Genuine Article (R) Number: 680YM
TI Theoretical comparison of optical traps created by standing wave and single beam
AU Zemanek P (Reprint); Jonas A; Jakl P; Jezek J; Sery M; Liska M
CS Acad Sci Czech Republ, Inst Sci Instruments, Kralovopolska 147, CS-61264 Brno, Czech Republic (Reprint); Acad Sci Czech Republ, Inst Sci Instruments, CS-61264 Brno, Czech Republic; Brno Univ Technol, Fac Mech Engn, Brno 61669, Czech Republic
CYA Czech Republic
SO OPTICS COMMUNICATIONS, (15 MAY 2003) Vol. 220, No. 4-6, pp. 401-412.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0030-4018.
DT Article; Journal
LA English
REC Reference Count: 35
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB We used generalised Lorenz-Mie scattering theory (GLMT) to compare submicron-sized particle optical trapping in a single focused beam and a standing wave. We focus especially on the study of maximal axial trapping force, minimal laser power necessary for confinement, axial trap position,

and axial trap stiffness in dependency on trapped sphere radius, refractive index, and Gaussian beam waist size. In the single beam trap (SBT), the range of refractive indices which enable stable trapping depends strongly on the beam waist size (it grows with decreasing waist). On the contrary to the SBT, there are certain sphere sizes (non-trapping radii) that disable sphere confinement in standing wave trap (SWT) for arbitrary value of refractive index. For other sphere radii we show that the SWT enables confinement of high refractive index particle in wider laser beams and provides axial trap stiffness and maximal axial trapping force at least by two orders and one order bigger than in SBT, respectively. (C) 2003 Elsevier Science B.V. All rights reserved.

L4 ANSWER 12 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 2002:400944 SCISEARCH
GA The Genuine Article (R) Number: 548CY
TI Simplified description of optical forces acting on a nanoparticle in the Gaussian standing wave
AU Zemanek P (Reprint); Jonas A; Liska M
CS Acad Sci Czech Republ, Inst Sci Instruments, Kralovopolska 147, CS-61264 Brno, Czech Republic (Reprint); Acad Sci Czech Republ, Inst Sci Instruments, CS-61264 Brno, Czech Republic; Brno Univ Technol, Fac Mech Engn, Brno 61669, Czech Republic
CYA Czech Republic
SO JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION, (MAY 2002) Vol. 19, No. 5, pp. 1025-1034.
Publisher: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
ISSN: 0740-3232.
DT Article; Journal
LA English
REC Reference Count: 35
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB We study the axial force acting on dielectric spherical particles smaller than the trapping wavelength that are placed in the Gaussian standing wave. We derive analytical formulas for immersed particles with relative refractive indices close to unity and compare them with the numerical results obtained by generalized Lorenz-Mie theory (GLMT). We show that the axial optical force depends periodically on the particle size and that the equilibrium position of the particle alternates between the standing-wave antinodes and nodes. For certain particle sizes, gradient forces from the neighboring antinodes cancel each other and disable particle confinement. Using the GLMT we compare maximum axial trapping forces provided by the Gaussian standing wave trap (SWT) and single-beam trap (SBT) as a function of particle size, refractive index, and beam waist size. We show that the SWT produces axial forces at least ten times stronger and permits particle confinement in a wider range of refractive indices and beam waists compared with those of the SBT. (C) 2002 Optical Society of America.

L4 ANSWER 13 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 2002:733145 SCISEARCH
GA The Genuine Article (R) Number: 587FV
TI Optical angular momentum transfer to transparent isotropic particles using laser beam carrying zero average angular momentum
AU Santamato E (Reprint); Sasso A; Piccirillo B; Vella A
CS Ist Nazl Fis Mat, Dipartimento Sci Fis, Via Cintia, I-80126 Naples, Italy (Reprint); Ist Nazl Fis Mat, Dipartimento Sci Fis, I-80126 Naples, Italy
CYA Italy
SO OPTICS EXPRESS, (26 AUG 2002) Vol. 10, No. 17, pp. 871-878.
Publisher: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
ISSN: 1094-4087.
DT Article; Journal
LA English
REC Reference Count: 19

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The torque exerted by an astigmatic optical beam on small transparent isotropic particles was dynamically measured observing the angular motion of the particles under microscope. The data confirmed that torque was originated by the transfer of orbital angular momentum associated with the spatial changes in the phase of the optical field induced by the moving particle. This mechanism for angular momentum transfer works also with incident light beams with no net angular momentum. (C)2002 Optical Society of America.

L4 ANSWER 14 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 2002:713896 SCISEARCH
GA The Genuine Article (R) Number: 583PX
TI Moving interference patterns created using the angular Doppler-effect
AU Arlt J (Reprint); MacDonald M; Paterson L; Sibbett W; Dholakia K; Volke-Sepulveda K
CS Univ Edinburgh, COSMIC, JCMB, Kings Bldg, Edinburgh EH9 3JZ, Midlothian, Scotland (Reprint); Univ Edinburgh, COSMIC, JCMB, Edinburgh EH9 3JZ, Midlothian, Scotland; Univ St Andrews, Sch Phys & Astron, St Andrews KY16 9SS, Fife, Scotland; INAOE, Grp Foton & Fis Opt, Puebla 72000, Mexico
CYA Scotland; Mexico
SO OPTICS EXPRESS, (12 AUG 2002) Vol. 10, No. 16, pp. 844-852.
Publisher: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
ISSN: 1094-4087.
DT Article; Journal
LA English
REC Reference Count: 14

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We use the angular Doppler-effect to obtain stable frequency shifts from below one Hertz to hundreds of Hertz in the optical domain, constituting a control of 1 part in 10(14). For the first time, we use these very small frequency shifts to create continuous motion in interference patterns including the scanning of linear fringe patterns and the rotation of the interference pattern formed from a Laguerre-Gaussian beam. This enables controlled lateral and rotational movement of trapped particles. (C) 2002 Optical Society of America.

L4 ANSWER 15 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 2002:384226 SCISEARCH
GA The Genuine Article (R) Number: 546QC
TI Rotational control within optical tweezers by use of a rotating aperture
AU O'Neil A T (Reprint); Padgett M J
CS Univ Glasgow, Dept Phys & Astron, Kelvin Bldg, Glasgow G12 8QQ, Lanark, Scotland (Reprint); Univ Glasgow, Dept Phys & Astron, Glasgow G12 8QQ, Lanark, Scotland
CYA Scotland
SO OPTICS LETTERS, (1 MAY 2002) Vol. 27, No. 9, pp. 743-745.
Publisher: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
ISSN: 0146-9592.
DT Article; Journal
LA English
REC Reference Count: 21

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We demonstrate a simplified method of rotational control of objects trapped within optical tweezers that does not require high-order modes, interferometric precision, or computer-controlled optical modulators. Inserting a rectangular aperture into the optical beam results in a focused spot that also has rectangular symmetry. We show that an asymmetric object trapped in the beam has its angular orientation fixed such that rotation of the aperture results in a direct rotation of the particle. (C) 2002 Optical Society of America.

L4 ANSWER 16 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

AN 2001:843096 SCISEARCH
GA The Genuine Article (R) Number: 483BL
TI Optical manipulation of microscopic objects by means of vertical-cavity surface-emitting laser array sources
AU Ogura Y (Reprint); Kagawa K; Tanida J
CS Osaka Univ, Grad Sch Engn, Dept Mat & Life Sci, Suita, Osaka 5650871, Japan
CYA Japan
SO APPLIED OPTICS, (20 OCT 2001) Vol. 40, No. 30, pp. 5430-5435.
Publisher: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.
ISSN: 0003-6935.
DT Article; Journal
LA English
REC Reference Count: 18
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB We report on experimental verification of optical trapping using multiple beams generated by a vertical-cavity surface-emitting laser (VCSEL) array. Control of the spatial and temporal emission of a VCSEL array provides flexibility for manipulation of microscopic objects with compact hardware. Simultaneous capture of multiple objects and translation of an object without mechanical movement are demonstrated by an experimental system equipped with 8 x 8 VCSEL array sources. Features and applicability of the method are also discussed. (C) 2001 Optical Society of America.

L4 ANSWER 17 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 1999:791245 SCISEARCH
GA The Genuine Article (R) Number: 244YV
TI Microinstrument gradient-force optical trap
AU Collins S D (Reprint); Baskin R J; Howitt D G
CS UNIV CALIF DAVIS, MICROINSTRUMENTS & SYST LAB, DEPT ELECT ENGN, DAVIS, CA 95616 (Reprint); UNIV CALIF DAVIS, MICROINSTRUMENTS & SYST LAB, DEPT MOL & CELLULAR BIOL, DAVIS, CA 95616; UNIV CALIF DAVIS, MICROINSTRUMENTS & SYST LAB, DEPT MECH ENGN, DAVIS, CA 95616
CYA USA
SO APPLIED OPTICS, (1 OCT 1999) Vol. 38, No. 28, pp. 6068-6074.
Publisher: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036.
ISSN: 0003-6935.
DT Article; Journal
FS PHYS; ENGI
LA English
REC Reference Count: 29
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB A micromachined fiber-optic trap is presented. The trap consists of four single-mode, 1064-nm optical fibers mounted in a micromachined silicon and glass housing. Micromachining provides the necessary precision to align the four optical fibers so that the outputs have a common intersection. The beam intersection forms a strong three-dimensional gradient-force trap with trapping forces comparable with that of optical tweezers. Characterization of the multibeam fiber trap is illustrated for capture of polystyrene microspheres, computer simulations of the trap stiffness, and experimental determination of the trapping forces. (C) 1999 Optical Society of America.

L4 ANSWER 18 OF 18 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AN 1999:935580 SCISEARCH
GA The Genuine Article (R) Number: 260MC
TI Photorefractive phase-conjugate optics for image processing, trapping, and manipulation of microscopic objects
AU Chiou A E (Reprint)
CS NATL DONG HWA UNIV, INST ELECT ENGN, SHOUFENG, HUALIEN, TAIWAN (Reprint)
CYA TAIWAN
SO PROCEEDINGS OF THE IEEE, (DEC 1999) Vol. 87, No. 12, pp. 2074-2085.

Publisher: IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC, 345 E 47TH ST, NEW YORK, NY 10017-2394.
ISSN: 0018-9219.
DT Article; Journal
FS ENGI
LA English
REC Reference Count: 62
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Optical phase conjugation using photorefractive materials can he readily integrated with laser microscopy and interferometry for image processing, trapping, and manipulation of microscopic objects. This paper briefly reviews the basic principles associated with each individual component and describes some recent developments and potential applications of their integration.

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-5.86

STN INTERNATIONAL LOGOFF AT 08:18:38 ON 08 AUG 2003